

Stryker...

IMPROVED VISION

PTOOEY!
I SURE HOPE
THEY CLEAN MY
MIRRORS AND
HEADLIGHTS
WHEN WE GET
BACK!

I
CAN'T
SEE A
THING!

PREVENTS A COLLISION!

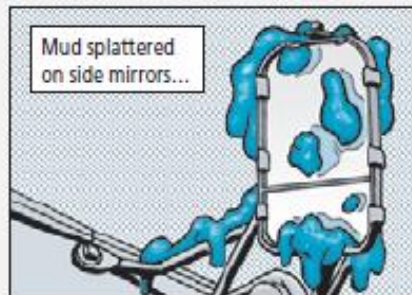
HERE'S
A LITTLE
ACRONYM
PUZZLER
FOR YOU,
DRIVERS:
WYSIWYG
(PRONOUNCED
WIZZY-WIG).

GIVE UP? IT STANDS FOR "WHAT
YOU SEE IS WHAT YOU GET."

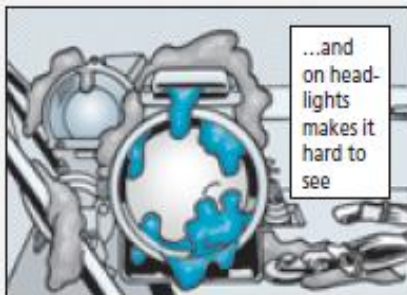
AND IF YOU HAVEN'T BEEN
KEEPING THE SIDE MIRRORS AND
HEADLIGHTS CLEAN ON YOUR
STRYKER, WHAT YOU'RE SEEING
IS CLOUDY AND HAZY.

The mirrors and headlights get splattered with mud during missions, so it's up to you to clean them off after every operation. If you don't, your vision is reduced and that can lead to an accident.

Mud splattered
on side mirrors...



...and
on head-
lights
makes it
hard to
see



The side mirrors are easy to clean. Just use some warm water and a clean, wet cloth. Make sure you wipe in one direction, though. Wiping in multiple directions is a good way to smear the mirror and increase the chance of scratching it.

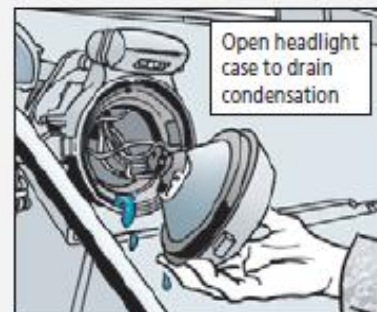
When the mud's gone, polish each mirror with some glass cleaner, like NSN 7930-01-326-8110, and a clean cloth.

Headlights are a bit more difficult. High-pressure water is out because it forces water inside the headlight case where it can short out the bulb.

Use a squirt bottle to gently spray the headlight with warm water. After the mud loosens, spray again and then wipe the headlight with a wet cloth. Rinse and repeat until the headlight is clean.

Even if you didn't use high-pressure water, those headlights are still going to get some water inside. How? Condensation.

So when you're cleaning the headlight, look for water inside the case. If you spot any, open the case and drain it out.



Open headlight
case to drain
condensation

M2/M3-Series Bradleys...

BLOWING OFF A LITTLE STEAM

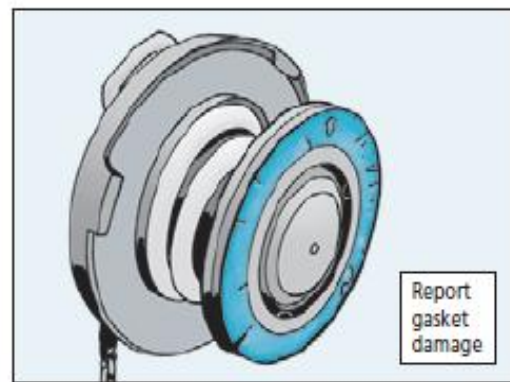


CREWMEN,
YOU CAN KEEP
YOUR BRADLEY
FROM GETTING
STEAMED BY
KEEPING A CLOSE
EYE ON THE
RADIATOR CAP.



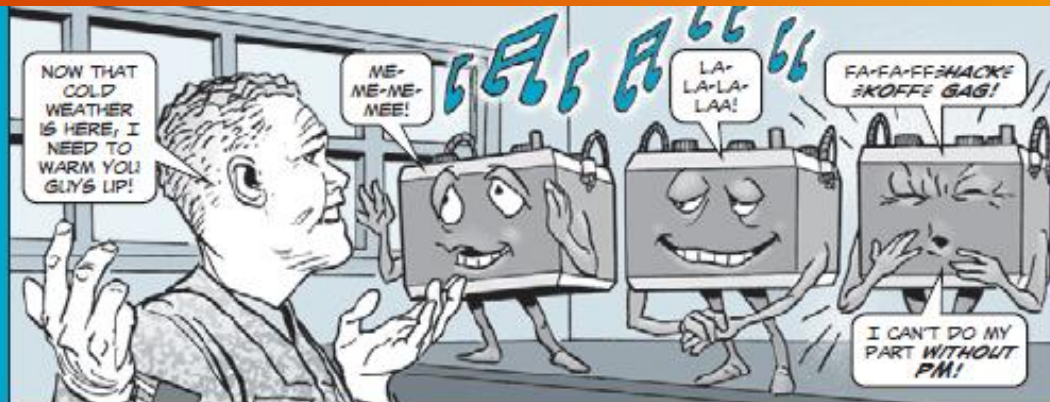
Opening and closing the cap wears out the rubber gasket inside. When the gasket wears enough, the cooling system can't pressurize properly, coolant escapes, and the vehicle overheats.

So, eyeball the gasket for cuts, tears or unusual wear. Report a bad radiator cap to your mechanic. He'll order a new one with NSN 5342-01-398-2835.



Report
gasket
damage

WINTER BATTERY CARE



AT A PLACE LIKE FORT DRUM, YOU MAY BE EXPOSED TO TEMPERATURES AROUND -30°F. THAT'LL SAP YOUR VEHICLE'S BATTERIES!

SO HERE'S WHAT YOU NEED TO KNOW TO PRESERVE YOUR BATTERIES IN WINTER WEATHER!

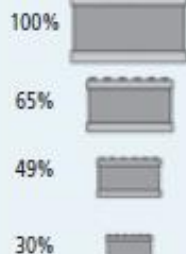


Daily Start-ups

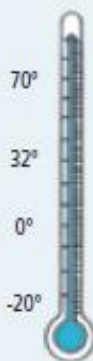
Daily start-up helps to preserve the life of your batteries. But you need to run the engine long enough to recharge the battery. Thirty minutes should be enough.

A fully charged lead-acid battery loses a third of its cranking power at 32°F. At 0°F, it has less than half its cranking power, and at -20°F it has only 30 percent. If that's what happens to a battery in good shape, imagine what happens to one that's in bad shape!

BATTERY CRANKING POWER



ENGINE RESISTANCE TO STARTING



Check your batteries now so they'll work when cold weather hits. And take these steps to determine if your batteries can survive the cold.

Read the TM

HAVE A COPY OF TM 9-6140-200-14 (SEP 98), OPERATOR'S, UNIT, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL FOR LEAD-ACID STORAGE BATTERIES, HANDY.

THE GUIDANCE YOU NEED TO TEST AND KEEP YOUR BATTERIES FULLY CHARGED IS IN CHAPTER 3.

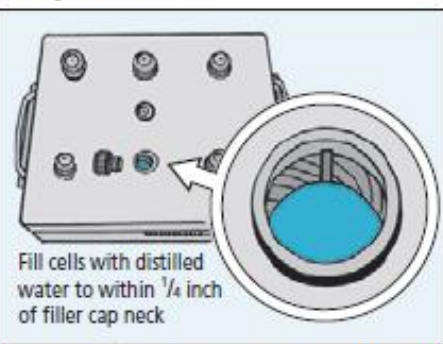


Test the Battery Condition

Before testing the condition of a flooded type battery, check the level of electrolyte. (Don't do this on sealed AGM or gel type batteries.) Add distilled water, NSN 6810-00-682-6867, as needed. Replace the caps, then start the vehicle's engine and let it run on fast idle (1,000-1,200 rpm) for at least 20 minutes, or attach a charger for 20-30 minutes. Charging mixes the water and electrolyte.

Make sure you do this because if they don't mix, you'll end up only testing water! This mixing also helps keep plain water from freezing, preventing cracked battery cases.

It's best to test the electrolyte right after shutting off the engine; if you see bubbling in the cells, wait until that stops before testing. Then use an antifreeze and battery tester, also known as a refractometer, NSN 6650-00-105-1418, or a hydrometer tester, NSN 6630-00-171-5126.

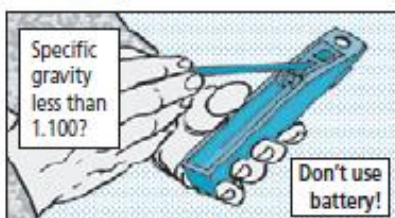


Fill cells with distilled water to within 1/4 inch of filler cap neck

Check Specific Gravity

Before putting a battery—old or new—on the job, mechanics, use the tester to check the battery's specific gravity. That tells you the battery's state of charge.

If the specific gravity is less than 1.100, or if the difference in specific gravity between cells is more than 0.025, don't use the battery! Turn it in.



Up-Armored
HMMWVs...

Load Range E Tire Talk

Here's a trivia question for all of you *Jeopardy!* fans: The newest tire available for use on up-armored HMMWVs. Time's up!

Did you answer, "What is the load range E tire?" Then you're exactly right! This tire helps bear heavier vehicle weights and payloads.

Don't Mix Tire Load Ranges

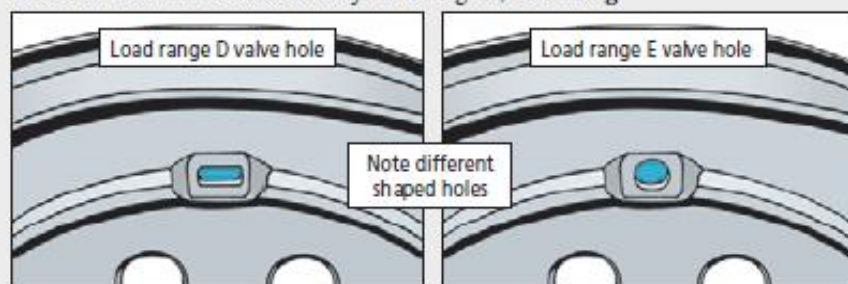
The load range E (L/R E) tire and wheel assembly, NSN 2530-01-563-8620, are 24-bolt tandem pattern or 20-bolt wheel assemblies with a rated load capacity of 4,540 pounds. The L/R E can handle cold tire pressures of up to 65 psi and uses tire, NSN 2610-01-563-8328.

The basic HMMWV tire and wheel assembly, NSN 2530-01-558-2138, is load range D (L/R D). It mounts on 12-bolt or 24-bolt evenly spaced wheel assemblies and has a rated load capacity of 3,850 pounds. It can handle cold tire pressures of up to 50 psi, and uses tire, NSN 2530-01-493-5859.

The L/R E assembly can handle more tire pressure and greater load capacity than the L/R D, so **don't** mix them on the same vehicle, including the spare. Mixing them is not safe and can lead to wheel failure or problems handling the HMMWV.

Keep Tires on Their Rated Wheels

Also, *never* install an L/R E tire on an L/R D wheel assembly. Don't install an L/R D tire on an L/R E wheel assembly either. Again, **no mixing!**



Before adjusting tire pressure, make sure you verify the tire and wheel rating. To help you out, wheel ratings are stamped on the outer rim. Never inflate to more pressure than what's identified in tables 1-15 and 1-15.1 in the operator's manual for standard configuration. Or refer to the GTA SMART card for Frag kits 5, 6, and 7 found on AKO:

<https://www.us.army.mil/suite/folder/1120230>

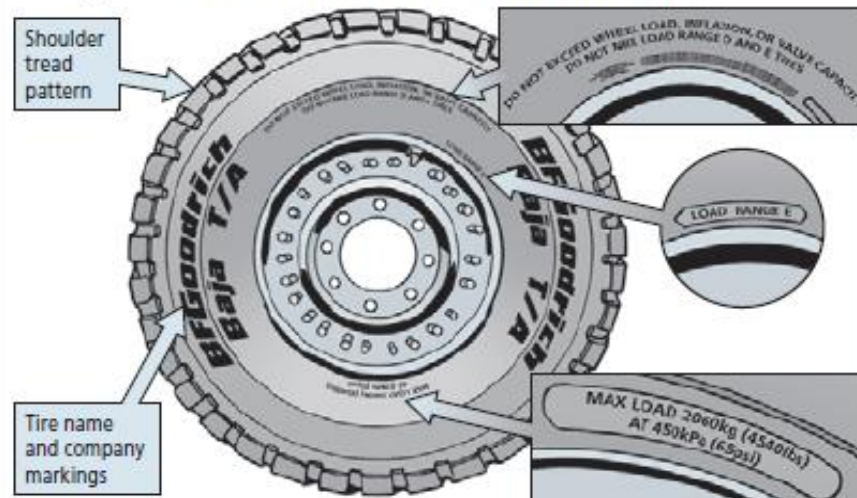
NSN 2610-01-563-8328
BRINGS EITHER THE
GOODYEAR® OR MICHELIN®
LOAD RANGE E TIRE!



Goodyear Wrangler MT/R Tire (MT/R)



Michelin BF Goodrich Baja T/A Tire (Baja)



A HMMWV tire and wheel assembly reference guide is available online to help with this. Go to:

https://aeaps2.ria.army.mil/commodity/Gpm/Tacom_WN/tire-fitment-chart.pdf

TACOM LCMC's GPA 09-013 introduced L/R E tires. That message is online at this link:

https://aeaps2.ria.army.mil/commodity/gpm/tacom_wn/gpa09-013.html

EASIER WHEEL END HUB ADJUSTMENT

WHASSA MATTER, BUDDY?

SIGHE MY MECHANIC DIDN'T KNOW HOW TO ADJUST MY END HUB!



Dear Editor,

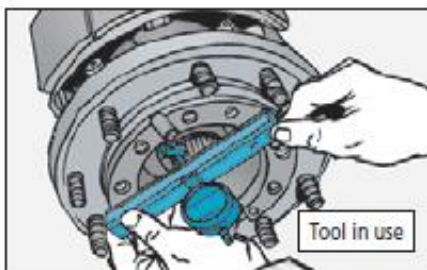
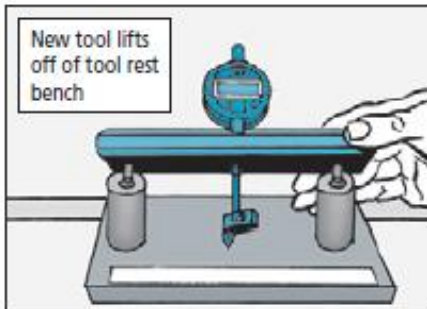
The current FMTV wheel end hub adjustment procedure in our manuals is hard to do correctly. This procedure sets the play for your wheel end spider gear. The TM calls for a measurement from the hub face to the wheel nut with only a 0.005-in variance.

Soldiers in the field must use a depth micrometer to correctly take and calculate the wheel end's shim thickness. Failing to shim the wheel hub correctly could result in premature hub and bearing failure, so you want to get this right. Troops have come up with different measurements, some even as far out as 0.030 of an inch!

Then one smart Soldier, with the help of a local machine shop, designed a tool that takes the micrometer reading and the math out of this procedure. The new tool consists of a digital dial indicator and a tool rest bench.

The tool rest bench is machine ground to the mean of the hub variance measurement. While on the rest, zero the dial, then align the tool on the hub face. The measurement on the indicator is the amount of shim required.

New tool lifts off of tool rest bench



Tool in use

This tool—while on the rest—can also be used to measure the shims for proper thickness. Using this tool results in a quicker, more accurate procedure that requires less double checking by supervisors and is less confusing to users.

This tool is difficult to make, so we recommend units purchase it directly from the manufacturer:

Debolt Machine, Inc.
Attn: Paul Debolt
4208 West Pike
Zanesville, OH 43701

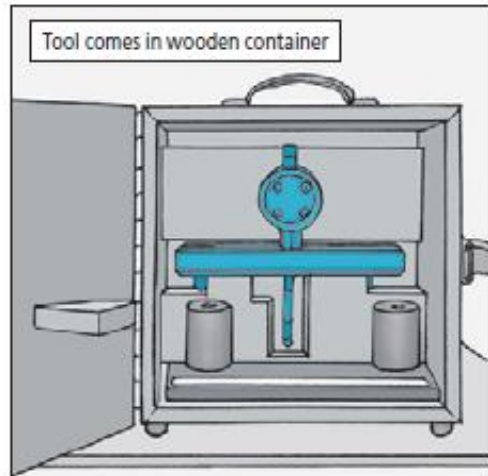
Email:

debolt@columbus.rr.com

Phone: 740-454-8082

The boxed and ready-to-use digital dial indicator and tool rest bench together cost about \$1,012. The tool is stored in a wooden container and it comes with operating instructions.

Tool comes in wooden container

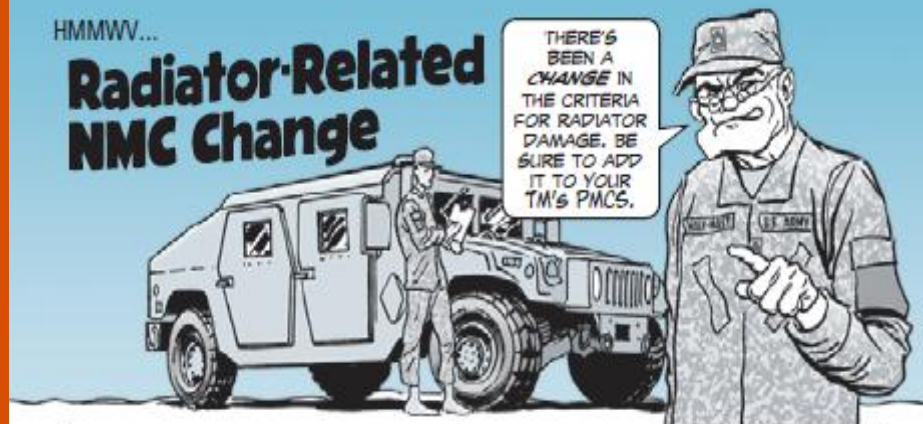


Tom Tarrell
FMTV Equipment Specialist
TACOM LCMC, Warren, MI

Editor's note: Thanks for sharing that super shim solution, Tom.

HMMWV...

Radiator-Related NMC Change



Dear Editor,

We've received reports from the field that HMMWV radiator mount bracket welds are breaking. This is most likely due to excessive vibration and jarring when Soldiers drive over uneven and rough terrain.

The current operator PMCS criteria for radiator damage in TM 9-2320-280-10 doesn't allow for *any* broken radiator mount bracket welds. So if just a single bracket weld breaks, the HMMWV is not fully mission capable (NMC). Now TACOM LCMC is changing that.

Until the -10 TM is updated, please have your readers go to Item 53c in PMCS Table 2-2 of TM 9-2320-280-10 (Jan 96, w/Ch 3, Jul 04). Have them pencil in the following change in the *Not Fully Mission Capable If* column: *"Support mounts broken, damaged, or missing hardware. Side brackets damaged or two or more weldments broken allowing movement of radiator".*

Table 2-2. Preventive Maintenance Checks and Services (Cont'd)

Item No.	Interval	Location	Crewmember Procedure	Not Fully Mission Capable If:
		Item to Check/Service		
53	Weekly	Cooling System (Cont'd) SIDE BRACKET WELDMENTS	c. Check support mounts, side brackets, and side bracket weldments on radiator for missing hardware, damage, or broken welds. 	Support mounts broken, damaged, or missing hardware. Side brackets damaged or two or more weldments broken allowing movement of radiator

By the way, TM 9-2320-387-10, the operator's manual for up-armored HMMWVs, has already been updated with this info.

Buck McCulston
HMMWV Equipment Specialist
TACOM LCMC-Warren, MI

Editor's note: Thank you, Buck. You've given us good info that'll put some deadlined HMMWVs back in business.

MRAP...

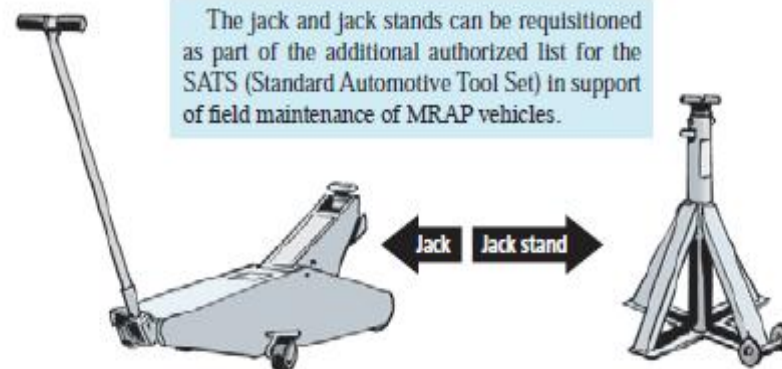
GETTING A HANDLE ON JACK STANDS



Mechanics, do enough maintenance on MRAPs and eventually you're going to need a jack and some jack stands, especially if you're stationed in Afghanistan.

But there's a slight problem. There hasn't been an authorized jack or stand available that's rugged enough and with enough lifting capacity to do the job.

Problem solved! TACOM has put together just what you need: a 20-ton hydraulic jack, NSN 4910-01-583-5138, and a pair of 10-ton high boy jack stands, NSN 4910-01-583-5140.

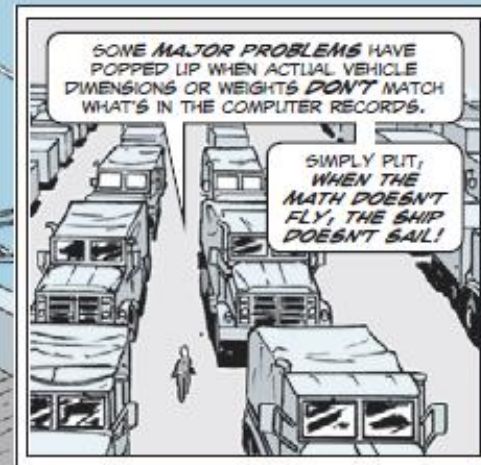
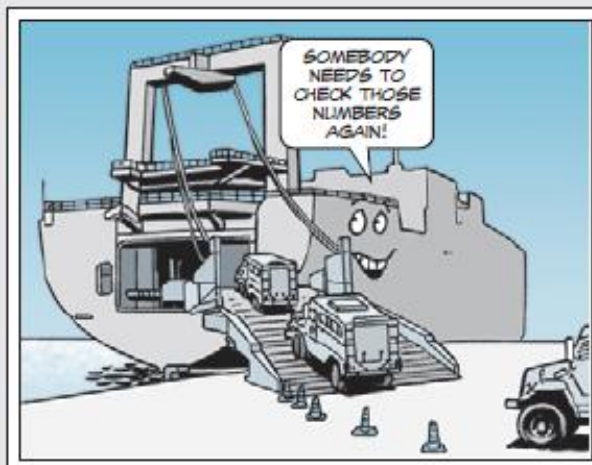


The jack and jack stands can be requisitioned as part of the additional authorized list for the SATS (Standard Automotive Tool Set) in support of field maintenance of MRAP vehicles.

Check out maintenance information message (MIM) 10-049 for more information. You'll find the MIM at the AEPS website:

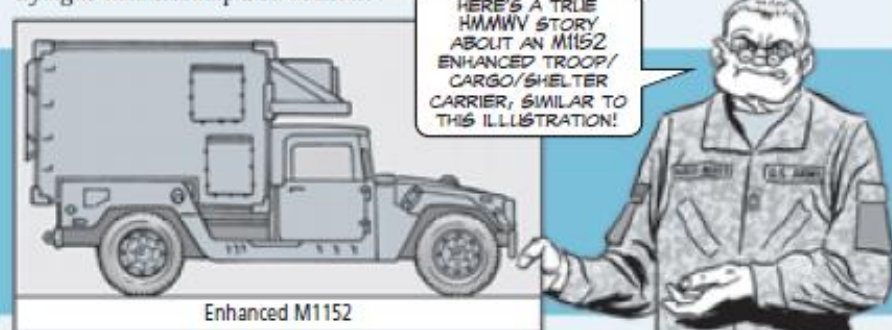
https://aeps2.ria.army.mil/commodity/mam/tacom_wn/mi10-049a.html

Record Your Vehicle Data Correctly for Deployment

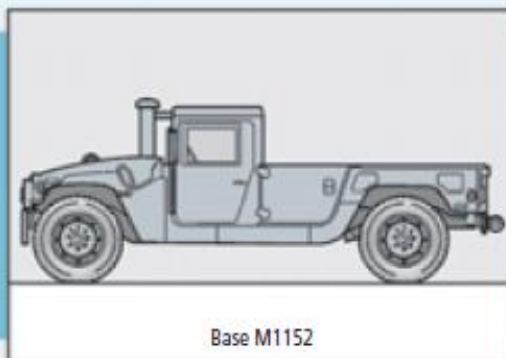


The word's in: Your unit's shipping out. In the following burst of activity, everyone may rush a bit more in their duties and lose track of some details that shouldn't be forgotten.

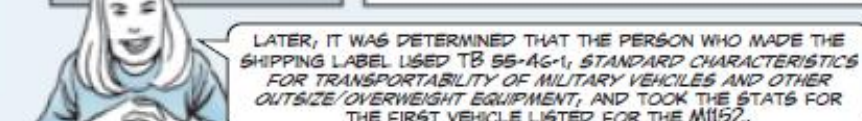
Missing details while preparing for deployment can result in big headaches when trying to load and ship unit vehicles.



Enhanced M1152



Base M1152

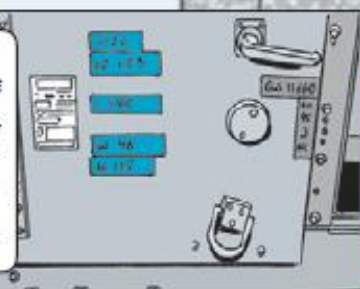


BUT THERE ARE SEVERAL VARIATIONS OF THE M1152. THE STATISTICS FOR THE BASE VEHICLE (SHOWN ABOVE) WERE MISTAKENLY ENTERED INTO THE COMPUTER, AND THOSE NUMBERS DIDN'T INCLUDE THE SHELTER'S ADDED WEIGHT AND DIMENSION.

For example, one M1152 shelter carrier's white shipping label listed vehicle specifications in inches as: Length—194, Width—86, Height—76, and Weight—7,146 pounds. The actual vehicle dimensions were Length—198, Width—96, Height—115, and Weight—11,660 pounds!

There are many HMMWV models, so it's easy to see how this mistake happened. Someone entered the stats from a base model HMMWV into the deployment planning software, instead of taking the time to check the unit's MTOE for the specific model, then looking up and entering the correct data.

THE ACTUAL PHYSICAL DIMENSIONS AND WEIGHT LISTED BY THE INSTALLATION FOR SHIPPING THIS VEHICLE, AND WRITTEN ON GREEN TAPE, DIDN'T MATCH THE NUMBERS ENTERED INTO THE COMPUTER SYSTEM THAT GENERATED THE SHIPPING LABEL.



In some cases, entire vehicle lots have been delayed from deployment by ship, rail, air or highway due to errors in reported dimensions or weights. These mistakes don't make the headshed happy.

So, during deployment planning and operations, **before** shipping labels get slapped on vehicles slated for shipment, check the following:

- Are you using your unit's MTOE for accurate vehicle model information?
- Were the correct vehicle models entered into the database?
- Do computer-generated numbers match, or at least come close, to actual vehicle measurements?

For vehicle specifics, see TB 55-46-1, *Standard Characteristics (Dimensions, Weight, and Cube) for Transportability of Military Vehicles and Other Outsize/Overweight Equipment*.

You can also check out the Transportation Engineering Agency's (TEA) handbooks and pamphlets. Visit the TEA website: <http://www.tea.army.mil/>

If you have questions about deployment-related shipping, contact John Newman at DSN 770-5263, (618) 220-5263, or email: john.d.newman@us.army.mil



